

Dodonaea microcarya Small, sp. nov. A shrub or a small tree 6 m. tall, with a trunk diameter up to 15 cm., the bark rough, the twigs reddish, glabrous: leaves numerous; blades cuneate to obovate-cuneate or broadly spatulate, 1-5 cm. long, usually less than 4 cm., thick, entire, rounded or emarginate at the apex, glabrous, short-petioled: flowers not seen; fruit suborbicular in outline, often somewhat depressed, less than 1 cm. wide, usually 5-7 mm. across the wings, emarginate at the apex and tipped with the blunt style base, short-stipitate, the pedicel as long as the fruit or shorter; seeds subglobose, nearly 2 mm. in diameter, smooth but scarcely shining.—Hammocks, Big Pine Key, Florida.

This plant has no close relative among the *Dodonaea* of the American tropics. Its foliage somewhat resembles that of the Hawaiian *Dodonaea spatulata*, but the leaf-blades are more decidedly cuneate and the fruits are much smaller. The type specimens collected on the northern part of Big Pine Key, Florida, May 8, 1919, by John K. Small, Alfred Cuthbert, and Paul Matthaus, number 9105, are in the herbarium of the New York Botanical Garden.

ILLUSTRATIVE MATERIAL OF GAPS AND TRACES IN TEACHING PLANT ANATOMY.

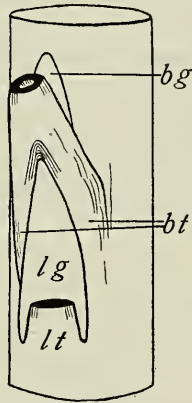
C. L. WILSON.

As every teacher of plant anatomy knows, it is easy to demonstrate leaf and branch gaps as seen in a cross section of the stem. This is usually accomplished by free-hand sections through the stem, the sections being laid out in series until the whole of the gap is seen, from the passing out of the trace to the closing of the gap. Most herbaceous stems will serve for this purpose, as well as some woody stems in which little secondary growth has occurred. Fern rhizomes, particularly those of *Dennstaedtia* and *Adiantum*, are especially effective, since there are no branch traces to confuse the beginning student.

It is not so easy, however, for the beginner to visualize the nodal region of a stem as it would appear in face view with the cortex removed. Such a stem may be found in mullein (*Verbascum Thapsus* L.). In old stems which have been exposed to the action of the weather for a year or longer, it will be found

that the cortex has entirely disappeared. The leaf gaps in such a stem are conspicuous by their size. In the upper regions of the stem in which the gap has not been buried in secondary wood, they may measure from five to ten mm. in height and three to five mm. in width at the base.

The best material which the writer has seen is the decorticated stems of *Decodon verticillatus* (L.) Elliott, an aquatic perennial rather widely distributed in the eastern United States. In this form, which is found on the borders of ponds, the aerial stems die down every year, and commonly lie in the water all winter. The action of the bacteria in the water in removing the pith and cortex may be completed by boiling the stem a short



Nodal anatomy in *Decodon*. bg, branch gap; bt, branch trace; lg, leaf gap; lt, leaf trace.

time in caustic potash. A face view of traces and gaps in this form is seen in the accompanying figure. Although the gaps are small, they may be easily studied with the naked eye. Except toward the base of the slender stems, secondary growth is small in amount, and the branch gap, which is commonly obscured first by cambial activity, is readily distinguished. The leaf trace is single, and the leaf gap extends upward until it merges with the branch gap. The branch trace arises from the sides of this common gap, and unites shortly after passing off from the stele. The condition here illustrated is probably a common one in woody plants.

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